Goldeneye Pond

Kosciusko County

Supplemental Evaluation

Date of Survey: July 20 – July 21, 2009

Biologist: Nathan D. Thomas

Survey Objectives: The dam at Goldeneye Pond was replaced in the summer of 2008. As a result, the pond was drained and remnant waters were treated with rotenone in September, 2008. Due to low water levels, the stocking of 26,000 bluegill (0.62-2.52 in) and 5,200 largemouth bass (4.2-4.8 in) was delayed until March, 2009. The objective of this survey was to evaluate the success of the post-renovation stocking under workplan #300FW1F10D42603.

Methods: Fish sampling effort was conducted according to current DFW guidelines and included 0.5 h of pulsed DC electrofishing (504V) with two dip-netters, two gill net lifts, and two trap net lifts. All captured fish were measured to the nearest tenth-inch (total length, TL) and released when possible. Weights were estimated from standard length-weight formulas generated from data on file from Indiana natural lakes fish population surveys. Fish scales were taken from largemouth bass and bluegills for age and growth analyses using standard body-length: scale-length relationships.

Summary: A total of 390 fish, weighing 41 lbs was collected during the survey. Bluegills ranked first by number (57%) and weight (34%). Golden shiners were second by number (15%) and third by weight (16%). Pumpkinseed sunfish (14%) and largemouth bass (10%) were third and fourth by number. Brown bullheads were fifth by number (3%), but second by weight (19%). Other fish collected in the survey included four warmouth, one black crappie, one lake chubsucker, and one bluntnose minnow.

A total of 221 bluegills was collected that weighed 14.8 lbs. They ranged in length from 1.8 to 8.2 in, however the majority of fish were less than 5.0 in. Growth was average for age-1, and was slightly below average for age-2 and age-3. However, age-1 fish collected during the

survey averaged 4.0 in, indicating growth after stocking was rapid. Bluegills were captured at a rate of 52/hr of electrofishing and 96 per trap net lift.

Forty largemouth bass were collected that weighed 6.2 lbs. They ranged in length from 2.7 to 13.2 in. The majority of individuals collected were less than 7.5 in. Growth of age-1 bass was above average and growth after stocking was fast with age-1 individuals averaging 6.8 in. They were captured at a rate of 80/hr of electrofishing.

It is clear that other species survived the rotenone treatment. Golden shiners, pumpkinseed sunfish, and brown bullheads accounted for over 30% of the total catch. Though it is not anticipated that these species will negatively impact the success of the 2009 stocking, it is recommended that additional largemouth bass be stocked to limit the reproduction of these species. Finally, the collection of ample numbers of age-1 bluegill and largemouth bass indicated the subsequent stocking of these species was successful. It is recommended that Goldeneye Pond be resurveyed in the future to determine the long-term success of the stocking.

Recommendations:

- Additional largemouth bass should be stocked to limit reproduction of unwanted species that survived the rotenone treatment.
- Goldeneye Pond should be resurveyed in the future to determine the long-term success of the stocking.

Submitted by: Nathan D. Thomas, Assistant Biologist

Date: 11/2/09

Approved by: Jed Pearson, Fisheries Biologist

Date: 11/03/09

Approved by: Stuart Shipman, Regional Supervisor

Date: 11/03/09

APPENDIX

FISH SURVEY REPORT

Indiana Division of Fish and Wildlife

Type of survey	
Initial:	Re-survey: X

Lake name	County	Date of survey (Month, day, year)
Goldeneye Pond	Kosciusko	7/20-21/09
Biologist's name		**Date of approval (Month, day, year)**
Thomas		

LOCATION		
Quadrangle name	Range	Section
North Webster	7E	1,12
Township	Nearest town	
33N	North Webster	

ACCESSIBILITY

State owned public access site	Privately owned public access site	Other access site
Yes, South end of lake		

Surface acres	Maximum depth (ft)	Average depth (ft)	Acre feet	Water level (msl)	Extreme fluctuations (ft)
26	18				Minimal

INLETS

Name	Location	Origin
Unnamed	East end	Bufflehead Pond
Unnamed	NE Corner	Runoff

OUTLET

Name	Location
Unnmaed Ditch	SW Corner, flows to Lake Webster

Water level control

Earthern Dam along south shore

POOL	ELEVATION (Feet MSL)	ACRES	Bottom type	
TOP OF DAM			Boulder	
TOP OF FLOOD CONTROL POOL			Gravel	
TOP OF CONSERVATION POOL			Sand	
TOP OF MINIMUM POOL			Muck	X
STREAMBED			Clay	X
			Marl	

Watershed use

Tri-County FWA

Development of shoreline

None

Previous surveys and investigations

Fisheries Surveys, IDNR: 1966, 1970, 1973, 1979, 1983, 1986, 1987, 1988, 1989, 1993, 1996-2002

Renovated and restocked in 1977, 1986. Quality LMB project 1996-2002.

SAMPLING EFFORT			
ELECTROFISHING	Day hours	Night hours	Total hours
		0.5	0.5
TRAPS	Number of traps	Days	Total lifts
	2	1	2
GILL NETS	Number of nets	Days	Total lifts
	2	1	2

PHYSICAL AND CHEMICAL CHARACTERISTICS				
Color	Turbidity			
Light Brown	8	Feet	0	Inches (Secchi disk)

TEMPERATURE, DISSOLVED OXYGEN (ppm), TOTAL ALKALINITY (ppm), pH							
Depth (ft)	Degrees F	Oxygen*		Depth (ft)	Degrees F	Oxygen*	
Surface	72.3	8.6		50			
2	72.5	8.4		52			
4	72.5	8.2		54			
5	72.5	8.0		55			
6	72.5	7.9		56			
8	72.1	7.2		58			
10	64.9	0.8		60			
12	59.0	0.6		62			
14	54.0	0.4		64			
15	52.2	0.4		65			
16	51.6	0.4		66			
18				68			
20				70			
22				72			
24				74			
25				75			
26				76			
28				78			
30				80			
32				82			
34				84			
35				Sampling date:			
36					Surface	Bottom	
38				pH	7.5	7.0	
40				Alkalinity*	171	205	
42				Conductivity			
44				TDS			
45							
46							
48							

**ppm = parts per million*

Relative Abundance, Size and Estimated Weight of Fish Collected at Goldeneye Pond

Common Name*	Number	Percent	Minimum Length (in)	Maximum Length (in)	Weight (lb)**	Percent
Bluegill	221	56.7	1.2	8.2	14.84	36.3
Golden shiner	59	15.1	4.3	8.1	6.49	15.9
Pumpkinseed sunfish	53	13.6	3.5	6.0	4.59	11.2
Largemouth bass	40	10.3	2.7	13.2	6.20	15.2
Brown bullhead	10	2.6	9.0	12.6	7.61	18.6
Warmouth	4	1.0	4.8	6.2	0.57	1.4
Lake chubsucker	1	0.3	8.5	8.5	0.32	0.8
Black crappie	1	0.3	8.1	8.1	0.28	0.7
Bluntnose minnow	1	0.3	1.9	1.9	<0.01	0.0
Total (9 species)	390				40.90	

*Common names of fishes recognized by the American Fisheries Society.
**Weights estimated from standard length-weight regression models.

Number, catch by gear, percentage, estimated weight and age of bluegill

Length	Catch by gear			Total	%	Estimated	Age analysis (scales/half-inch)						Age Composition (number/age)					
(in)	EF	GN	TN	Number		Weight (lb)	1	2	3	4	5	6+	1	2	3	4	5	6+
1.0	1			1	0.5	0.00												
1.5					0.0	0.00												
2.0					0.0	0.01												
2.5	6			6	2.7	0.01	5						6					
3.0	3		6	9	4.1	0.02	4						9					
3.5	3		30	33	14.9	0.03	7						33					
4.0	3		53	56	25.3	0.05	5						56					
4.5	5	1	47	53	24.0	0.07	7						53					
5.0	3	2	30	35	15.8	0.09	7						35					
5.5	2		12	14	6.3	0.12		1	5					2	12			
6.0			10	10	4.5	0.16			4		1				8		2	
6.5			3	3	1.4	0.20			2	1					2	1		
7.0					0.0	0.26												
7.5					0.0	0.32												
8.0			1	1	0.5	0.39						1	0	0	0	0	0	1
Totals:	26	3	192	221		14.84	35	1	11	1	1	1	192	2	22	1	2	1
N/hr	52	2	96									Mean length (in):	4.1	5.5	5.8	6.5	6.0	8.0
or lift												Variance:	0.39	0.00	0.11	---	0.00	---

Number, catch by gear, percentage, estimated weight and age of largemouth bass

Length	Catch by gear			Total	%	Estimated	Age analysis (scales/half-inch)						Age Composition (number/age)					
(in)	EF	GN	TN	Number		Weight (lb)	1	2	3	4	5	6+	1	2	3	4	5	6+
2.5	1			1	2.5	0.01												
3.0																		
3.5																		
4.0																		
4.5																		
5.0																		
5.5																		
6.0	4			4	10.0	0.10	4						4					
6.5	26			26	65.0	0.13	7						26					
7.0	7			7	17.5	0.16	6						7					
7.5	1			1	2.5	0.20		1						1				
8.0																		
8.5																		
9.0																		
9.5																		
10.0																		
10.5																		
11.0																		
11.5																		
12.0																		
12.5																		
13.0	1			1	2.5	1.09						1						1
Totals:	40	0	0	40		6.20	17	1	0	0	0	1	37	1				1
N/hr	80	0	0									Mean length (in):	6.5	7.5	---	---	---	13.0
or lift												Variance:	0.07	---	---	---	---	---

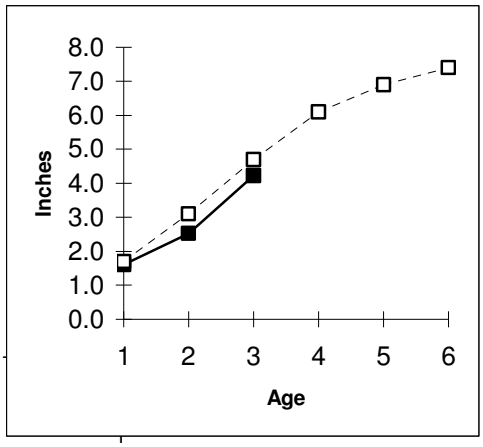
Bluegill
Intercept: 0.8 inch

BACK-CALCULATED LENGTHS (inches) AT EACH AGE

Year Class	Count	I	II	III	IV	V	VI	VII
2008	35	1.8						
	stdev	0.3						
2007	1	1.7	3.0					
	stdev	-	-					
2006	11	1.4	2.5	4.2				
	stdev	0.3	0.5	0.6				
2005	1	1.8	3.0	4.3	5.4			
	stdev	-	-	-	-			
2004	1	1.3	2.1	3.5	5.3	6.1		
	stdev	-	-	-	-	-		
2003	0							
	stdev							
2002	1	1.7	3.6	4.9	6.4	6.8	7.3	7.90
	stdev	-	-	-	-	-		
Mean*		1.6	2.5	4.2				
SD		0.2	0.5	0.6				
Count		50	15	14	3	2	0	1

**Does not include age groups with less than three samples.*

Bluegill growth (solid line) compared to other Indiana natural lakes (dotted line).



Largemouth bass
Intercept: 0.8 inch

BACK-CALCULATED LENGTHS (inches) AT EACH AGE

Year Class	Count	I	II	III	IV	V	VI
2008	17	4.5					
	stdev	0.4					
2007	1	4.4	6.7				
	stdev	---	---				
2006	0						
	stdev						
2005	0						
	stdev						
2004	1	3.6	7.3	9.7	12.0	13.0	
	stdev	---	---	---	---	---	
Mean*		4.5	---	---	---	---	
SD		0.4	---	---	---	---	
Count		19	2	1	1	1	

**Does not include age groups with less than three samples.*

Largemouth bass growth (solid line) compared to other Indiana natural lakes (dotted line).